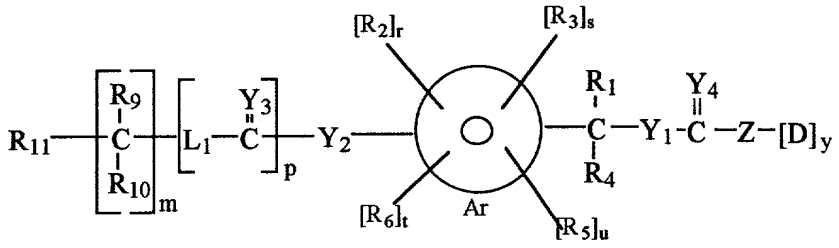
WE CLAIM:

1. A compound of Formula I:

(I) 

wherein:

L_1 is a bifunctional linking moiety;

D is a moiety that is a leaving group, or a residue of a compound to be delivered into a cell;

Z is covalently linked to $[D]_y$, wherein Z is selected from the group consisting of: a moiety that is actively transported into a target cell, a hydrophobic moiety, and combinations thereof;

Y_1, Y_2, Y_3 and Y_4 are each independently O, S, or NR_{12};

R_{11} is a mono- or divalent polymer residue;

R_1, R_4, R_9, R_{10} and R_{12} are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{3-12} branched alkyls, C_{3-8} cycloalkyls, C_{1-6} substituted alkyls, C_{3-8} substituted cycloalkyls, aryls, substituted aryls, aralkyls, C_{1-6} heteroalkyls, substituted C_{1-6} heteroalkyls;

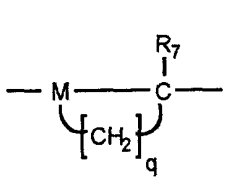
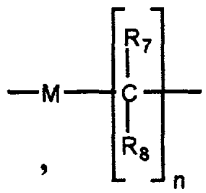
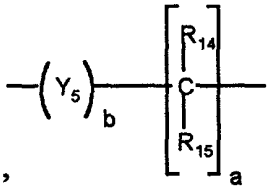
R_2, R_3, R_5 and R_6 are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{1-6} alkoxy, phenoxy, C_{1-8} heteroalkyls, C_{1-8} heteroalkoxy, substituted C_{1-6} alkyls, C_{3-8} cycloalkyls, C_{3-8} substituted cycloalkyls, aryls, substituted aryls, aralkyls, halo-, nitro- and cyano-, carboxy-, C_{1-6} carboxyalkyls and C_{1-6} alkylcarbonyls;

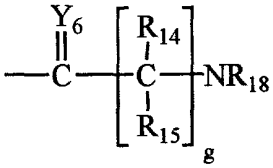
Ar is a moiety which when included in Formula (I) forms a multi-substituted aromatic hydrocarbon or a multi-substituted heterocyclic group;

(m), (r), (s), (t), and (u) are independently zero or one;

(p) is zero or a positive integer; and (y) is 1 or 2.

2. The compound of claim 1, wherein L_1 is selected from the group consisting of:




and


;

wherein:

M is X or Q; where X is an electron withdrawing group;

Q is a moiety containing a free electron pair positioned three to six atoms from ;

(a) and (n) are independently zero or a positive integer;

(b) is zero or one;

(g) is a positive integer;

(q) is three or four;

R_7, R_8, R_{14} R_{15} and R_{18} are independently selected from the group which defines R_9; and

Y_5 and Y_6 are independently O, S, or NR_{12}.

3. The compound of claim 1 wherein when y is 2, each of the two D moieties is the same or different.

4. The compound of claim 1 wherein Z is selected from the group consisting of an amino acid residue, a sugar residue, a fatty acid residue, a peptide residue, a C_{6-18} alkyl, a substituted aryl, a heteroaryl, —C(=O), —C(=S), and —C(=NR_{16}), wherein R_{16} is selected from the same group as R_{12}.

5. The compound of claim 4 wherein the amino acid residue is selected from the group consisting of alanine, valine, leucine, isoleucine, glycine, serine, threonine, methionine, cysteine, phenylalanine, tyrosine, tryptophan, aspartic acid, glutamic acid, lysine, arginine, histidine and proline.

6. The compound of claim 4 wherein the peptide ranges in size from about 2 to about 10 amino acid residues.

7. The compound of claim 6 wherein the peptide is Gly-Phe-Leu-Gly or Gly-Phe-Leu.

8. The compound of claim 1 wherein each D moiety is independently a residue of an active biological material, or H.

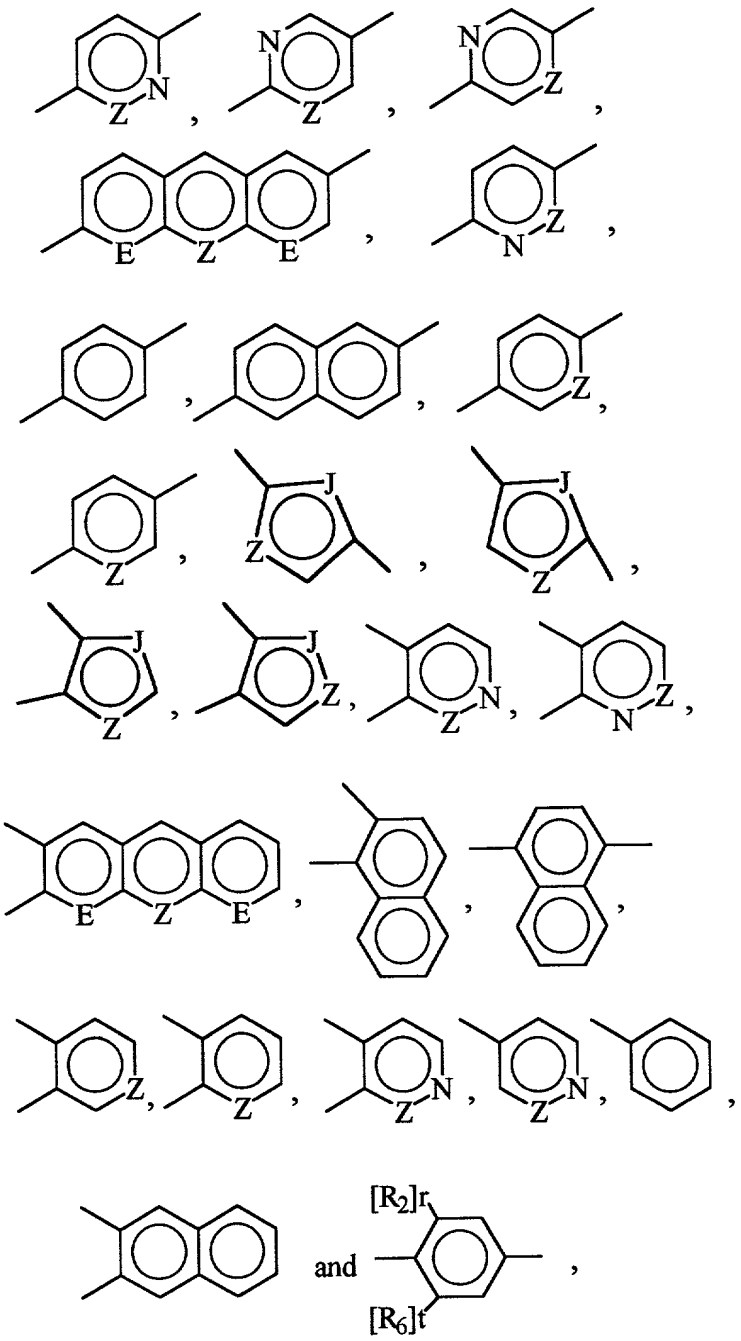
9. The compound of claim 1 wherein each D moiety is independently a residue of an anticancer agent, an anticancer prodrug, a detectable tag, and combinations thereof.

10. The compound of claim 9 wherein the anticancer agent or anticancer prodrug comprises an anthracycline compound or a topoisomerase I inhibitor.

11. The compound of claim 9 wherein the anticancer agent or anticancer prodrug is selected from the group consisting of daunorubicin, doxorubicin, p-aminoaniline mustard, melphalan, cytosine arabinoside, gemcitabine, and combinations thereof.

12. The compound of claim 1 wherein at least one D moiety is a leaving group selected from the group consisting of as N-hydroxybenzotriazolyl, halogen, N-hydroxy-phthal-imidyl, p-nitrophenoxy, imidazolyl, N-hydroxysuccinimidyl, thiazolidinyl thione, and combinations thereof.

13. The compound of claim 1 wherein Ar is selected from the group consisting of,



wherein J is selected from the group consisting of O, S, and N-R_{19}, E and Z are independently C-R_{19} or N-R_{19} and R_{19} is selected from the group consisting of hydrogen, C_{1-6} alkyl, C_{3-12} branched alkyl, C_{3-8} cycloalkyl, C_{1-6} substituted alkyl, C_{3-8} substituted

cycloalkyl, aryls, substituted aryl, aralkyl, C_{1-6} heteroalkyl, and substituted C_{1-6} heteroalkyls.

14. The compound of claim 1, wherein -[L_1-C]- comprises an amino acid residue.

15. The compound of claim 14, wherein said amino acid residue is selected from the group consisting of naturally occurring and non-naturally occurring amino acid residues.

16. The compound of claim 1, wherein (p) is one.

17. The compound of claim 2, wherein X is selected from the group consisting of O, NR_{12}, -C-N-, S, SO and SO_2 where R_{17} is independently selected from the group consisting of hydrogen, C_{1-6} alkyl, C_{3-12} branched alkyl, C_{3-8} cycloalkyl, C_{1-6} substituted alkyl, C_{3-8} substituted cycloalkyl, aryl, substituted aryl, aralkyl, C_{1-6} heteroalkyl, substituted C_{1-6} heteroalkyl.

18. The compound of claim 17, wherein X is selected from the group consisting of O and NR_{12}.

19. The compound of claim 2, wherein Q is selected from the group consisting of C_{2-4} alkyls, cycloalkyls, aryls, and aralkyl groups substituted with a member of the group consisting of NH, O, S, $-CH_2-C(O)-N(H)-$, and *ortho*-substituted phenyls.

20. The compound of claim 2, wherein (n) is 1 or 2.

21. The compound of claim 1, wherein (m) is 0.

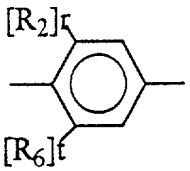
22. The compound of claim 1, wherein Y_1, Y_2, Y_3 and Y_4 are O.

23. The compound of claim 1, wherein R_{11} comprises a polyalkylene oxide residue.

24. The compound of claim 23, wherein said polyalkylene oxide residue comprises polyethylene glycol.

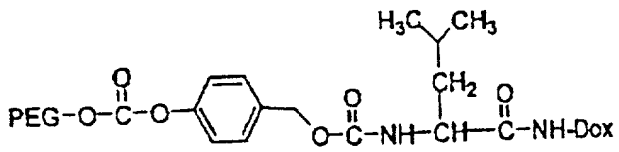
25. The compound of claim 1 wherein said polymer residue has a number average molecular weight of from about 2,000 to about 100,000 daltons.

26. The compound of claim 1, wherein said polymer residue has a number average molecular weight of from about 20,000 to about 40,000 daltons.

27. The compound of claim 13, wherein Ar is 

wherein r and t are both 1, and R_2 and R_6 are independently H or methyl.

28. The compound of claim 1 that is selected from the group consisting of:



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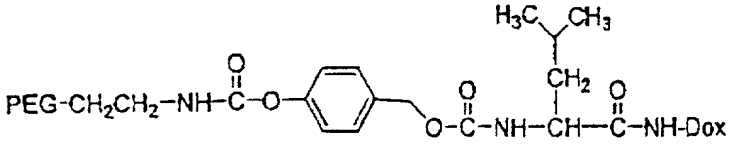

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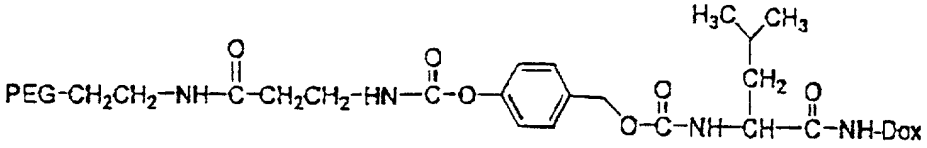

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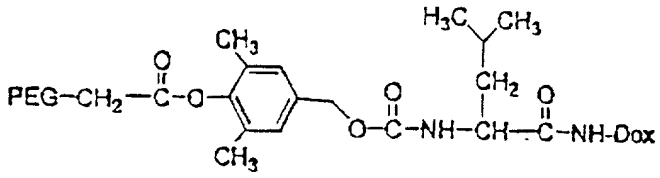

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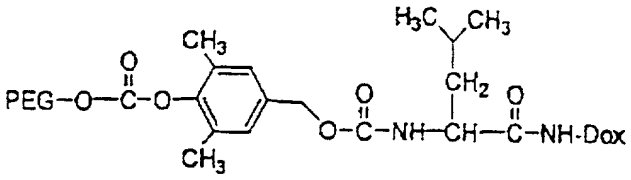

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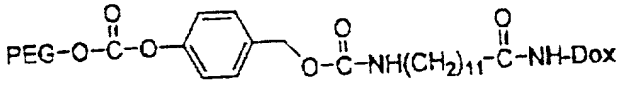

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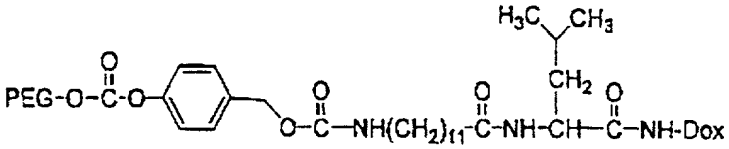
and



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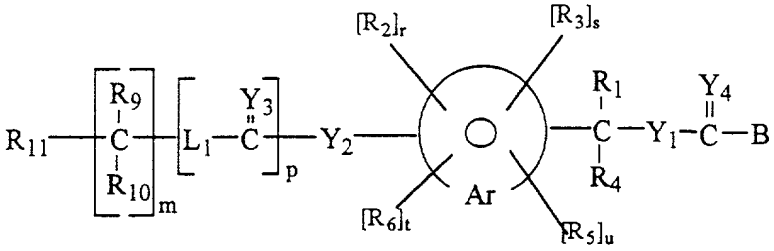
29. The compound of claim 28 wherein the polyethylene glycol (PEG) has a number average molecular weight of from about 20,000 to about 40,000 daltons.

30. A composition comprising a pharmaceutically or diagnostically effective amount of the compound of claim 1, where D is a residue of a compound to be delivered into a cell, together with a carrier acceptable for *in vivo* administration to an animal in need thereof.

31. A method of preparing a tetrapartate prodrug comprising reacting a compound of formula:

III 

with a compound of formula:

IV $Lx - Z - [D]_y$;

wherein B is a leaving group for Formula III

L_1 is a bifunctional linking moiety;

D is a moiety that is a leaving group, or a residue of a compound to be delivered into a cell;

Lx is a leaving group for Formula IV;

Z is covalently linked to $[D]_y$, wherein Z is selected from the group consisting of: a moiety that is actively transported into a target cell, a hydrophobic moiety, and combinations thereof;

R_1, R_4, R_9, R_{10} and R_{12} are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{3-12} branched alkyls, C_{3-8} cycloalkyls, C_{1-6} substituted alkyls, C_{3-8} substituted cycloalkyls, aryls, substituted aryls, aralkyls, C_{1-6} heteroalkyls, and substituted C_{1-6} heteroalkyls;

R_2, R_3, R_5 and R_6 are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{1-6} alkoxy, phenoxy, C_{1-8} heteroalkyls, C_{1-8} heteroalkoxy, substituted C_{1-6} alkyls, C_{3-8} cycloalkyls, C_{3-8} substituted cycloalkyls, aryls, substituted aryls, aralkyls, halo-, nitro- and cyano-, carboxy-, C_{1-6} carboxyalkyl and C_{1-6} alkylcarbonyl;

Ar is a moiety which when included in Formula (III) forms a multi-substituted aromatic hydrocarbon or a multi-substituted heterocyclic group;

(m), (r), (s), (t), and (u) are independently zero or one;

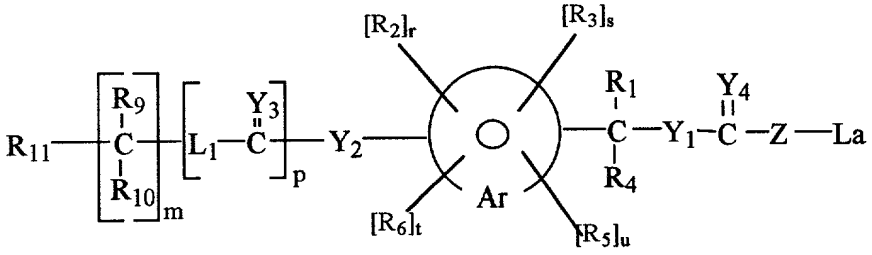
(p) is zero or a positive integer;

(y) is one or two; and

Y_1, Y_2, Y_3 and Y_4 are each independently O, S, or NR_{12} ; and

R_{11} is a monovalent or divalent polymer residue.

32. A method of preparing a tetrapartate prodrug comprising reacting a compound of formula

V 

with at least one biologically active material; wherein

L_1 is a bifunctional linking moiety;

La is a leaving group for Formula V;

Z is covalently linked to at least one biologically active material, wherein Z is selected from the group consisting of: a moiety that is actively transported into a target cell, a hydrophobic moiety, and combinations thereof;

R_1, R_4, R_9, R_{10} and R_{12} are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{3-12} branched alkyls, C_{3-8} cycloalkyls, C_{1-6} substituted alkyls, C_{3-8} substituted cycloalkyls, aryls, substituted aryls, aralkyls, C_{1-6} heteroalkyls, and substituted C_{1-6} heteroalkyls;

R_2, R_3, R_5 and R_6 are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{1-6} alkoxy, phenoxy, C_{1-8} heteroalkyls, C_{1-8} heteroalkoxy, substituted C_{1-6} alkyls, C_{3-8} cycloalkyls, C_{3-8} substituted cycloalkyls, aryls, substituted aryls, aralkyls, halo-, nitro- and cyano-, carboxy-, C_{1-6} carboxyalkyl and C_{1-6} alkylcarbonyl;

Ar is a moiety which when included in Formula (V) forms a multi-substituted aromatic hydrocarbon or a multi-substituted heterocyclic group;

(m), (r), (s), (t), and (u) are independently zero or one;

(p) is zero or a positive integer;

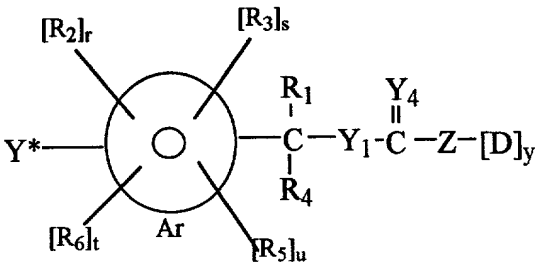
Y_1, Y_2, Y_3 and Y_4 are independently O, S, or NR_{12} ; and

R_{11} is a monovalent or divalent polymer residue.

33. A method of treating a disease or disorder in an animal, that comprises administering a pharmaceutically acceptable composition comprising an effective amount of a compound of claim 1,where D is a moiety that is a leaving group, or a residue of a compound to be delivered into a cell; to an animal in need thereof.

34. A method of delivering a biologically active material D into a cell in need of treatment therewith, comprising the process of administering a compound of claim 1 to an animal comprising said cell, wherein Formula I is hydrolyzed *in vivo* extracellularly to yield:

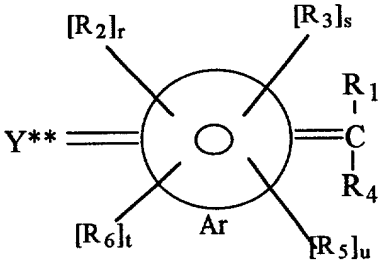
Formula I-(i)



wherein Y* is the remainder of Y_2, and is independently selected from the group consisting of HO-, HS-, or HNR_{12} - ;

and Formula I–(i) then spontaneously hydrolyzes to

Formula I-(ii)



and CO_2 , and a compound of

Formula I-(iii) $Z\text{-}[D]_y$ is released;

wherein Y** is the remainder of Y*, and is independently selected from the group consisting of O , S , or NR_{12} ; and $Z\text{-}[D]_y$ crosses the membrane of the cell, and is hydrolyzed therein to release D.